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June 20, 2001

GOVERNING BOARD FOR THE TOWNS OF
HAWTHORNE, WALKER LAKE, LUNING
AND MINA
LIQUOR BOARD AND GAMING BOARD

Dr. Jane R. Summerson, EIS Document Manager
Yucca Mountain Site Characterization Office, OCRWM
US Department of Energy
PO Box 30307, M/S 010
North Las Vegas, NV 89036-09307

RECEIVED

JUL 02 2001


**SUBJECT: MINERAL COUNTY'S FINAL COMMENTS to the Department of Energy's
Supplement to the Draft Environmental Impact Statement for a Geologic Repository
for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca
Mountain, Nye County, Nevada**

Dear Dr. Summerson:


Consistent with requirements of the National Environmental Policy Act (NEPA) and with the fiduciary responsibility vested to it through designation by the Secretary of Energy as an "Affected Unit of Local Government" pursuant to the Nuclear Waste Policy Act of 1982 (NWPA) the Board of Mineral County Commissioners is submitting these comments on the Supplement to the Draft Environmental Impact Statement (SDEIS) for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County, Nevada.

We trust that the comments which follow will serve to assist the Department of Energy (DOE) to prepare a Final Environmental Impact Statement (FEIS) which meets the statutory requirements for a "legally sufficient" document which can be used by the Secretary of Energy, the President of the United States, and Congress in making major federal decisions regarding the transportation and disposal of spent nuclear fuel, and other high-level radioactive waste. Failure by the DOE to adequately address Mineral County's comments in preparing the FEIS may render the document legally insufficient to support major federal decisions.

The following pages are Mineral County's **final** comments on the DOE's Supplement to the DEIS for Yucca Mountain. These statements have been presented to you by our "Affected Units of Local Government" representative, Judith A. Shankle. We have approved the statements provided to you by Mrs. Shankle. Also, we are sending any written comments made by the residents of Mineral County.


ARLO FUNK
Chairman
Mineral County Commissioners


KEVIN WADLOW
Vice-Chairman
Mineral County Commissioners


RICHARD BRYANT
Member
Mineral County Commissioners

A. GENERAL COMMENTS

1 | Mineral County believes the Supplement to the Draft Environmental Impact Statement (SDEIS) fails to meet the requirement that the Secretary of Energy's site recommendation include a description of the proposed repository and preliminary engineering specifications for the facility. The Final Environmental Impact Statement (FEIS) is part of the comprehensive basis required for the Secretary's recommendation, just as is the repository design description, and the FEIS must reflect the proposed repository design. A set of continually-evolving-analytical-design scenarios and a range of possible design features and operational parameters are not a preferred design with analyses performed on that design. Thus, the flexible design set forth by the SDEIS is neither sufficient for a FEIS nor for a Site Recommendation, if one is to be made. The DEIS, including any supplements, is the basis for the Final Environmental Impact Statement. It must include an evaluation of the impacts associated with **specific design alternatives** in order to support informed public review and comment, and ultimately an informed decision by the Secretary (*extracted from the State of Nevada's Comments at Armagosa Valley, NV public comment meeting on 31 May 2001).

B. SPECIFIC COMMENTS

* Flexible Repository Design

2 | The SDEIS describes two general design options, one which would result in drift wall temperatures rising to above the boiling temperature (higher-temperature operational mode), and one which would keep the waste container surface temperature below 85 degrees C (lower-temperature operational mode). Variable operational modes and design features are discussed that, in combination, could be arranged to meet either of the design options. The SDEIS asserts that the range of operational modes and design features described serves to bound the potential impacts of the repository. The DEIS made the same claim for the three general design options evaluated. However, the flexible design features and operational modes described in the SDEIS result in an increase, beyond the bounds evaluated in the DEIS, in nearly all impacts originally analyzed (*). Also, Table S-2 is not consistent in providing a range of impacts for many parameters |

3 | The SDEIS does not consider the potential for Yucca Mountain's geologic formation to accommodate spent fuel in amounts beyond that considered within the DEIS due to the closer spacing to be achieved through the flexible design. The SDEIS should provide a new estimate of the total potential spent fuel and other High-Level Radioactive Nuclear Waste (HLNW) that could be emplaced in Yucca Mountain. The SDEIS should consider what effect closer spacing of waste packages might have upon the probability and consequence of a volcanic dike encountering one or more waste packages. |

* Surface Facilities

1. The North Portal Operation Area will host two principal facilities:
 - a. A **Radiologically Controlled Area** for the Carrier Preparation Building (above ground) - receipt, handling, packaging of waste prior to emplacement. Figure 2-4 of

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Department of Energy's (DOE's) Supplement to the Draft Environmental Impact
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the SDEIS refers only to direct rail and heavy-haul access to the site, and text on page 2-12 refers to legal weight trucks. It is not clear if DOE anticipates legal weight trucks will be used to transport waste directly to Yucca Mountain; and

b. A **Waste Handling Building** (above ground). Two new significant features have been added to the conceptual repository surface facility (Waste Handling Building) by the SDEIS, and neither has been adequately analyzed. The proposed blending pool, in the waste handling building, designed to hold 5,000 MTHM, or 12,000 spent fuel assemblies, is not properly included in the accident analysis. The accident analysis in the SDEIS has the same scenario conditions as that in the DEIS - a seismic collapse of the Waste Handling Building with damage all waste casks in the building. The SDEIS fails to consider that if the Waste Handling Building collapses, the large fuel blending pool, built to the same design basis accident standards, will also fail. It also does not recognize that with the collapse of the building, electric power will be terminated, ending the ability to cool the spent fuel in the damaged or collapsed pool. Thus, a rapid, and possibly catastrophic heating of the damaged spent fuel in the pool may occur. This accident scenario must be fully analyzed, and its consequences described in the SDEIS (♦).

2. The SDEIS also describes a 200 acre spent fuel storage area, in the vicinity of the North Portal Operations Area, that would hold 40,000 MTHM of spent fuel in 4,500 dry casks for a 50-year cooling period. The Supplement does not include a seismic hazard analysis for this facility, that were it required to be licensed under the same Nuclear Regulatory Commission (NRC) rules being applied to the Skull Valley, Utah's proposed facility (which this facility is equivalent to, with the exception that the storage pad area at Skull Valley is proposed to be 100 acres.), would likely not be licensable because of the earthquake potential in the area. The SDEIS must include a seismic risk and consequence analysis for this proposed spent fuel storage area (♦).

* **Spent Fuel Blending and Fuel Aging**

If 50 years of storage for purposes of cooling the spent fuel is being considered - "to manage heat output, some fuel assemblies would be held in the fuel blending inventory until they generated less heat from radioactive decay or until low-heat-output fuel assemblies arrived for blending" (Page 2-15, "Waste Handling and Approach to Blending", last para) - , why bring the spent fuel to Yucca Mountain. Evaluation of a decades-long cooling period at the reactors would have provided a realistic No Action Alternative to replace the DEIS's analysis of the unrealistic scenario of essentially abandoning the spent fuel at the reactors for 10,000 years (♦). The SDEIS does not address what the transportation risk of the hotter commercial spent nuclear fuel would be. It does not consider the potential for an extended fuel-aging process to extend the transportation campaign. Nor does the SDEIS address the socioeconomic impacts associated with an aging related extended emplacement period. Furthermore, keeping the waste packages at the situs would reduce cost by not building a storage area at Yucca Mountain, and reduce accidental radioactive risk to the public and environment when transporting the high-level nuclear waste.

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* **Land**

8 1. The SDEIS states that there would be "no changes in land use and ownership from those presented in the DEIS - an area of about 150,000 acres of Bureau of Land Management, US Air Force, and DOE lands would be sufficient". Furthermore, DOE states "that it does not expect conflict with the use of surrounding lands because the proposed repository operations would occur in a confined, secure area over which it would have permanent control." However, the Southern Paiute Tribe of Nevada has said many times that they own the land by the Treaty of Ruby Valley and it has not given the federal government permission to use this land. In addition, on page 3-16 of the SDEIS, paragraph 3.1.13, "Environmental Justice", the DOE states it will "ensure the consideration of tribal rights and concerns before making decisions or implementing programs that could affect tribes." The DOE seems to have overlooked considering the concerns of the Southern Paiute Tribe of Nevada.

9 2. Land Area - Expanding the capability of the Waste Handling Building to use for blending hotter and cooler waste packages, and surface aging; adding flexibility to include subsurface design to enable a cooler repository, including increased ventilation; adding a solar power generating facility to reduce the need for power from off the site; revising the emplacement drift layout to include increasing spacing between emplacement drifts to allow a moisture pathway between drift, and providing access to roads; all contribute to a much larger repository design than was originally estimated (and which an associated design and controls were set to "minimize impacts to drainage channels, potential for increased erosion and impacts from flash flooding" - SDEIS, p3-7, para 3.1.3.2). Will this be a never-ending process? The DOE has expanded the land area which will be disturbed; but, the SDEIS provides no analysis of the additional disturbed land. The DOE assumes all land in the Yucca Mountain area is the same in terms of topography.

* **Emplacement of Drifts and Waste Packages**

In order to increase stability and manage the heat load of the proposed repository, the SDEIS:

- a. revises the drift emplacement layout to include increasing the space between drifts to allow a moisture pathway; and placing the repository emplacement drifts inside Yucca Mountain at least 660 feet below the surface and at least 525 feet above the water table; and
- b. varies the spacing between waste packages (the waste packages, end-to-end, would be spaced about 4 inches away from each other), and increases the number of waste packages for smaller commercial spent fuel assemblies to handle these hotter packages.

10 The SDEIS fails to analyze if the change in the emplacement of the waste would pose any
11 problems. The proposed action indicates that as many as 6,000 additional canisters would be
12... placed in Yucca Mountain. The SDEIS should analyze potential juvenile failures of the
canisters. Also, it does not consider the potential for the Yucca Mountain geologic formation to

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- 12 cont accommodate spent fuel in amounts beyond that considered within the DEIS due to the closer spacing to be achieved through the flexible design. The SDEIS should provide a new estimate of the total potential spent fuel and other high-level radioactive waste that could be emplaced in Yucca Mountain. Although "DOE did not perform a quantitative evaluation of the environmental impacts of variable drift spacing due to a design trade-off" (Page 2-31, para 4), a quantitative analysis of variable drift spacing should be performed. Furthermore, the SDEIS should consider what effect, if any, closer spacing of waste packages would have if a volcanic dike encountered one or more waste packages.

* Waste Packages

- 14 Presently, the DOE is anticipating on receiving a variety of waste forms with different fuel assemblies in each waste form (this pertains to **commercial spent fuel only**, and would arrive either as individual fuel assemblies placed directly into transportation casks or in dual-purpose canisters which would be opened and repackaged at the Waste Handling Building). At a March 29, 2001 meeting in Caliente, Nevada, the Nuclear Regulatory Commission (NRC) staff indicated the utilities are looking at using a multi-purpose dry-cask storage/ transportation systems (NRC anticipates licensing the same) that would require spent fuel to be handled once prior to shipment to a repository. The SDEIS should consider the transportation implications of such multi-purpose dry-cask storage/transportation systems.

* Ventilation

- 15 The SDEIS increases the number of ventilation shafts from 5 in the DEIS to a possible maximum of 17. Also, forced air is increased from 3.5 cubic feet to 530 cubic feet. "Fans at the surface ends of the exhaust shafts would provide the moving force for the subsurface repository airflow" (Page 2-22, Para 2). The SDEIS should consider the extent to which increased ventilation results in an enhanced exposure pathway. The SDEIS fails to consider that if the surface facilities and equipment were to fail, i.e., due to seismic activity, the electric power would be terminated and the ability to cool the repository would fail.

* Drip Shields

- 16... The SDEIS states that titanium drip shields will be constructed on site and placed over the waste packages after emplacement. It states that titanium is extremely corrosion resistant; however, on Page 3-19, para, 3.1.15 "Offsite Manufacturing", it states that **titanium is "somewhat difficult to refine into metal"**. The installation of drip shields at the time of repository closure may result in transportation of shields to the site over a relatively short period of time rather than during emplacement; and the cost of drip shields will be deferred. This does not seem to be consistent with protecting the waste packages and ultimately protecting the public and environment from potential escape of radionuclides during emplacement. If the drip shields are emplaced during waste package emplacement, will funds be available when needed? The SDEIS should consider:
- a. an analysis, now, on the ability for the DOE to mass produce the drip shields presently, and on the cost to produce and install the drip shields at time of waste package emplacement;

16 cont

b. the transportation accident and fatality risk associated with a short-duration campaign to ship drip shields to the site; and

c. a mitigation measure to include installation of drip shields at time of waste package emplacement.

* Transportation

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The SDEIS predicts 30 to 60 percent increase in material transport related traffic fatalities under the low-temperature alternative; however, it offers no suggestions for mitigating increased transportation risk nor considers whether any mitigation measures proposed in the DEIS remain valid. In addition, it predicts up to 50 percent increase in worker transport fatalities. This increase does not correlate with the estimated "small increase" in workers. Furthermore, due to the "blending design", hotter fuel would be shipped/transported sooner. The SDEIS should consider mitigating increased transportation risk and what mitigation measures proposed in the DEIS still remain valid.

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On page S-2, "Summary", last paragraph, DOE states that "the Final EIS will only evaluate the flexible design, including the reasonable range of operating modes, and any enhancements to the flexible design developed as the result of ongoing activities." ... and has no intention "to address the DEIS design in the FEIS". This implies that the transportation of High-Level Nuclear Waste (HLNW) will not be addressed at all. The SDEIS should address the transportation of HLNW as an environmental impact and not a connected action because the transportation of the waste packages is addressed, so should the transport of HLNW.

C. CONCLUSION

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The DOE states that both geologic and engineered (manmade) barriers will ensure long-term isolation of the waste from the human environment. The DOE uses the engineered barriers to provide most of the protection whereas in the Nuclear Waste Policy Act of 1982 originally envisioned that most of the protection would be from the natural or geologic barrier. Mineral County believes that when both natural and engineered barriers are used, the natural barriers should be the basis for isolating the waste. Furthermore, how does keeping and repackaging the waste packages above ground protect the public and environment?

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The shipping campaign has changed for both the duration and materials being used. The SDEIS indicates that DOE will continue performance conformation activities following site approval and designation. The DOE should propose to continue state and local government oversight functions to mitigate this longer site characterization-like process.

In conclusion Mineral County believes:

22...

1. What-if, analytical, theoretical scenarios are not conclusive. To date, no specific repository or waste package design has been selected and analyzed. The analytical, theoretical scenarios and possible variable ranges should not be a basis for providing a recommendation whether the site is

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- 22 cont suitable or not as a repository for High-Level Nuclear Waste. A final product should be proposed, produced and analyzed before such a recommendation could be made. The SDEIS lacks sufficient information and fails to provide many impact analyses; i.e., the new proposed action has the repository open for a longer period of time, and thus, extending the campaign to about 324 years. The SDEIS fails to address impacts due to a longer campaign. This is only one example of needed impacts. The SDEIS should address all impacts to include the transportation of High-Level Nuclear Waste.; |
- 23 2. Cost to clean up the Nevada Test Site (although DOE considers the Nevada Test Site a separate issue, Mineral County believes it needs to be included with the costs for the proposed Yucca Mountain repository as an associated cost) |
- 24 to build, provide, and maintain new routes (rail and/or roads), drip shields, emplacement pallets, and ventilation shafts, on-site facilities to house personnel, handle and repackage the waste packages; cost to ensure precautions are being taken to ensure safety; cost to train emergency response staff; cost to clean up a radioactive accident; and cost to mitigate would probably far exceed finding alternative ways to reuse this radioactive waste. The SDEIS has an inadequate analysis of costs. It should include analysis of the eventuality of the waste at Yucca Mountain; funds to monitor it, costs of drip shields to be emplaced at time of waste package emplacement, leaks and repair, and mitigation costs.; |
- 25 3. "Health Assessment" (at the cost of DOE) should be done now of all 10 affected counties. This assessment would reflect what is out there now. By showing the present health situations now, a case may be made for *not* adding to a potential number of latent cancer fatalities, and for documenting current health conditions prior to a radioactive waste accident.; and
- 26 4. The radioactive waste should not be buried because there is no way mankind can predict what will happen in the future. High risk of transporting, seismic activity, inclement weather, and the magnitude of this never-tried-before campaign are only a few reasons why the radioactive waste should not be buried. Alternative ways should be studied so technology can find a way to reuse this radioactive waste. A reasonable no-action alternative is preferred until technology can provide a better way of eliminating spent nuclear fuel and HLNW. Consequently, the SDEIS is inadequate in so many respects, especially with respect to its transportation elements (parameters), and should address mitigating increased transportation risk and what mitigation measures from the DEIS remain valid. |

Comments on the Supplement to the Draft Environmental Impact Statement (SDEIS)

I agree with the following statements which I have checked:

- 27 1. ☒ The Supplement to the Draft Environmental Impact Statement (SDEIS) as well as the DEIS are based on what if, analytical, theoretical scenarios.
☒ An evaluation of impacts associated with specific design alternatives should be done.
- 28 2. ☒ The new flexible design asserts that a range of operational modes and design features described serves to bound the potential impacts of the repository. The flexible design features and operational modes described in the SDEIS result in an increase, beyond the bounds evaluated in the DEIS in nearly all impacts originally analyzed.
☒ The SDEIS should provide a new estimate of the total potential spent fuel and other High- Level Nuclear Waste (HLNW) that could be emplaced in Yucca Mountain.
3. Additional above ground facilities will be added to the new flexible design:
 - a. A Carrier Preparation Building to receive, handle, and package the waste prior to emplacement.
 - b. A Waste Handling Building to support personnel, for warehousing, for security, to fabricate and cure precast components, to supply concrete for in-place casting, for motor pool transportation, to handle canister transfer for repository emplacement, and to blend commercial spent nuclear fuel in inventory pools.
 - c. Other surface facilities include Ventilation Shafts Operations Areas and Storage Areas for excavated rock, wastewater and stormwater, hazardous waste, electric power, and water supply and fossil fuels,
- 29 ☒ The SDEIS should fully analyze and describe consequences of an accident involving heating of spent nuclear fuel in the pools.
- 30 ☒ The SDEIS should analyze alternatives if the surface facilities and support should fail.
- 31 ☒ The SDEIS should address all impacts to include the transportation of HLNW.
- 32 4. ☒ 50 years of storage for the purpose of cooling the spent nuclear waste is being considered.
☒ A reasonable No Action Alternative is preferred where the spent nuclear fuel can be kept at the reactor sites for as long as 100 years.
- 33 5. ☒ The DOE should propose to continue state and local government oversight functions to mitigate a longer site characterization-like process.

Additional Comments:

34 I do not believe that DOE has extensively studied all of the
transportation problems that could be encountered.
Routes need to be clearly defined as well as modes of
transportation. The education & skill of the employed need
to be considered as well as all cost related.

Name: Shirley Fowler, Chief Appraiser

Location: MC Assessment Office,
Lawrence, KS 66044

Comments on the Supplement to the Draft Environmental Impact Statement (SDEIS)

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1. The Supplement to the Draft Environmental Impact Statement (SDEIS) as well as the DEIS are based on what if, analytical, theoretical scenarios.

_____ An evaluation of impacts associated with specific design alternatives should be done.

2. The new flexible design asserts that a range of operational modes and design features described serves to bound the potential impacts of the repository. The flexible design features and operational modes described in the SDEIS result in an increase, beyond the bounds evaluated in the DEIS in nearly all impacts originally analyzed.

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_____ A reasonable No Action Alternative is preferred where the spent nuclear fuel can be kept at the reactor sites for as long as 100 years.

5. The DOE should propose to continue state and local government oversight functions to mitigate a longer site characterization-like process.

Additional Comments:

35

The Yucca Mountain site should be more than adequate.
Current storage which is generally in highly populated
areas has been well controlled so why the big
argument from the few - Yucca Mountain is all there is.

Name: Rocky McKellip Sheriff Mineral County NC.

Location: Hawthorne NC.